

**VASCULAR PLANT SURVEY  
OF  
FORT FREDERICA NATIONAL MONUMENT,  
FORT SUMTER/FORT MOULTRIE NATIONAL MONUMENT  
AND  
CHARLES PINCKNEY NATIONAL HISTORIC SITE**

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**Report**  
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**Introduction:**

This inventory was designed to (a) document the presence of 90% of vascular plant species at Fort Frederica National Monument (FOFR), Fort Sumter/Fort Moultrie National Monument (FOSU), and Charles Pinckney Historic Site (CHPI); and (b) identify, delineate, and verify wetland types and vegetation communities at Fort Frederica National Monument (FOFR). The cooperative agreement or contract covers analysis of existing inventories and repositories of specimens, field surveys for vascular plants, and limited mapping of voucher specimens and species of management concern, such as federally listed threatened and endangered species, locally rare species, and non-native species.

#### **Study Area:**

Fort Frederica is an approximately 400 acre park most of which is saltmarsh, but includes a variety of habitats: large mown areas at the site of a colonial town, adjacent park-like areas of large specimen trees, successional loblolly pine forest, saltmarsh and saltmarsh edge, brackish marsh, small freshwater wetland habitats an old moat, swampy forests near the park entrance, and maritime forest and high marsh at the Bloody Marsh site. A grid interpreted from 1999 color infrared photos delineates major vegetation sites. A map created from this data shows additional fine-scale landscape features. Bratton (1985) has done an admirable job of chronicalling the land use history of Fort Frederica and a large portion of St. Simons Island. She traces land-use/landcover change in the form of wetlands drainage, timber removal for lumber and agriculture, and the effects of fire on plant communities from settlement in the early 18th century.

Fort Sumter is a 2.5 acre island. Fort Moultrie forms an 195 acre park. Fort Moultrie is located on Sullivan's Island a narrow barrier island. The park consists mostly of mown fields surrounding the old fort. Bordering these fields is an expanse of coastal dunes and live oak thicket. The park headquarters and vistor's center and its parking border the sound and the park includes a small area of marsh and marsh border. Fort Sumter itself dominates a small grassy island with little vegetation that is distinct from that found on either the dunes or mown areas of Fort Moultrie.

Charles Pinckney Historic Site is a 28 acre park most of which consists of mown fields planted in several places with scattered specimen trees. There are broad wooded borders (a mix of loblolly pine, water oak, and live oak) and a strip of wet forest (water oak, black gum, red maple, cabbage palmetto, red cedar) bordering a tidal creek.

**Sample Design:** All three parks are small enough that a detailed sampling scheme was not necessary. My general purpose was to survey all microhabitats across seasons in order to maximize the number of species encountered in fruit or flower. Only for such fertile specimens is exact identification possible and therefore voucher specimens must be in fruit or flower. Edges and ecotones were targeted for more intensive plant surveys since they are areas of high light which are generally protected from mowing. It is in these zones that plant diversity is highest.

#### **Sample Locations:**

At FOFR, I sampled throughout the park, surveying particularly along the shrubby thicket formed between mown areas and saltmarsh (the diversity of sun-loving plants is highest at this edge), in the marsh itself, along hedgerows adjacent to visitor

parking, in wet areas formed by the old moat, mown roadways through the forests, moist ditches and forest at the park entrance and shrubby wetlands at the northeast edge of the park where forest grades to saltmarsh.

At FOMO, I sampled throughout the park, surveying particularly along the hedgerow formed between mown areas and the primary dunes (the diversity of sun-loving plants is highest at this edge), on beach dunes and swales, along the marsh edge, in the marsh itself, hedgerows adjacent to visitor parking.

At CHPI, I sampled throughout the park, surveying particularly along the unmown field-forest edge where the diversity of sun-loving plants is highest, within the wet forest along the marsh edge, in the marsh itself, and in hardwood and mixed forests.

**Methods:** I identified and surveyed all of the distinct habitats within the park to collect flowering or fruiting vascular plant specimens on four dates, March, May, July, and October 2003.

### Results:

Fort Frederica (See Appendix A.1 for a complete species list.)

Ferns	Gymnosperms	Angiosperms	Monocots	Dicots	Total
5	2	180	37	144	188
Exotics	Cultivated				
19	8				

Fort Sumter/Fort Moutrie (See Appendix B for a complete species list.)

Ferns	Gymnosperms	Angiosperms	Monocots	Dicots	Total
2	1	70	20	82	105
Exotics	Cultivated				
14	4				

Charles Pinckney (See Appendix C for a complete species list.)

Ferns	Gymnosperms	Angiosperms	Monocots	Dicots	Total
1	2	70	9	62	75
Exotics	Cultivated				
13	5				

No state or federally listed species were found at any site.

### Discussion:

The barrier islands of the Southeast generally have a much lower floristic diversity than the mainland due to a relatively small diversity of habitat types relative to the mainland and a history of intensive land use. In addition, the areas surveyed were small and heavily managed. As a result, a large proportion of the species found at all three sites are weeds of cultivated fields or sun-loving species of fields and field edges. Many other species are common components of maritime or coastal forests (live oak, red cedar, water oak, sweetgum, cabbage palm, loblolly pine), marshes and wetland ecotones.

Although many exotic species are present on these sites, few appear to be a serious problem at present with the possible exception of Chinese tallow (*Sapium sebiferum*) which is present in small numbers at both CHPI and FOFR.

In terms of meeting the goal of documenting 90% of plant species on each site, 187 species were recorded from FOFR (specimens were collected for 170) in this survey. This is approximately 89% of the 210 species listed by Bratton (1985) from surveys in the early 1980s. There are many reasons for a shortfall in collected species. Collecting fertile specimens of all species observed is difficult when only four collecting dates are possible. This is particularly a problem for ephemeral species such as winter annuals (e.g. *Cardamine hirsuta*), annuals or perennials with a narrow blooming/fruiting period (e.g. *Listera australis*), especially if they occur in areas subject to frequent mowing, and late-blooming species such many fall-blooming composites (members of the Asteraceae). Many species present in the seed bank or as perennating structures may not appear vegetatively every year and may sprout only in particularly wet years. Cultivated “come and go” as a result of ongoing management. For example, while Bratton recorded cultivated figs occurring at FOFR, I wasn’t able to locate any. Many weedy species exist as metapopulations which occur sporadically on a given site though they may be common within a larger region. Lastly, some taxonomic revisions have resulted in formerly distinct taxa being “lumped” together (e.g. *Quercus maritima* >> *Quercus hemisphaerica*). A list of potential species which were not found in the 2003 survey are listed in Appendix A.2. On the other hand, a number of species not recorded by Bratton, mostly grasses or annuals, were documented to occur at FOFR. Because plant populations are obviously dynamic, species occurrences on the park shift annually though within a fairly narrow range.

#### Management Recommendations:

1) Chinese tallow (*Sapium sebiferum*) is an emerging problem in the coastal southeast. It occurs at very low densities at CHPI at marsh edges and along woodland edges and at FOFR along the marsh edge and within the freshwater wetland areas of the moats and to the north of them. Populations densities of many invasive plants build slowly so that the time to act is early on before plant densities and seedbanks have built up. Therefore, tallow populations should be closely monitored and existing trees removed.

2) Several very showy native species, such as Indian blanket (*Gaillardia pulchella*) and a large yellow evening-primrose (*Oenothera drummondii*) among many other species enliven dunes and open areas around the forts. Less frequent mowing of the large grassy acreage surrounding Fort Moultrie and FOFR, other than the main pedestrian pathways, would make for much more striking and diverse wildflower displays.

#### Plant Communities of Fort Frederica National Monument (including Bloody Marsh) (see also map in Appendix B)

Lawn or Field: A park-like expanse is maintained surrounding the old fort and on the site of the 18th century town. Large live oaks, hackberries, *Magnolia grandiflora*, *Citrus* ssp, *Bumelia* and other plantings spread over mown St. Augustine turf intermixed with a diversity of native and exotic annual and perennial herbs. In several spots near the marsh

edge, seepages have created small freshwater or brackish wetlands. Within and along the edges of the old moat, tall wetland vegetation dominates in strips. Several areas of lawn are mowed less often and exhibit greater species richness and are much more attractive. Mown areas and plantings extend to the parking lots and park buildings. This open expanse along with the marsh edge is perhaps the most floristically diverse and visually interesting portion of the park since at all seasons a variety of species, herb, shrub and/or tree, are in flower or fruit. The marsh edge as an ecotonal area is particularly rich and interesting botanically.

Live Oak/Magnolia Forest: Live oak and laurel oak are codominants occurring with *Magnolia grandiflora* and pignut hickory (*Carya glabra*), in the understory are scattered saw palmetto, wax-myrtle, blueberry (*Vaccinium* ssp), dogwood, redbud, persimmon and yaupon holly. A variant on this community maintained at the marsh edges includes cabbage palm and red cedar along with *Bacharis halimifolia* and *Bacharis angustifolia*, grasses, vines such as *Ampelopsis* and a variety of other woody and herbaceous perennials. On the Bloody Marsh tract, Live Oak/Magnolia (or Maritime) forest is somewhat richer with more hickory, cabbage palm, slash pine and persimmon.

Pine Succession: Forest dominated by loblolly pine with an advanced understory of live oak and water oak and an understory of *Vaccinium*, wax myrtle, and an occasional saw palmetto. This community covers a large area south of the fort and to the east of the park headquarters which was formerly cleared for agriculture. A wetter variant occurs on either side of the entrance drive dominated by loblolly pine, water oak, sweet gum, yellow poplar and some water tupelo in the wettest spots with an understory of saw palmetto, gallberry, cinnamon and netted chain fern.

Low Marsh: *Spartina alterniflora*.

High Marsh: *Juncus roemerianus*, *Distichlis spicata*,

Mud flats: *Salicornia virginica*, *Batis maritima* and *Borrichia frutescens*

## References

Bratton, SP. 1985. The vegetation history of Fort Frederica, Saint Simons Island, Georgia. *Castanea* 50(3) 133-145.  
Appendix A: Vascular Plants of Fort Frederica National Monument

## Appendix A.1: Vascular Plant Species of Fort Frederica National Monument

Division	Family	Scientific Name	Common Name
Ferns	Blechnaceae	<i>Woodwardia areolata</i>	Netted chainfern
	Osmundaceae	<i>Osmunda cinnamomea</i>	Cinnamon fern
	Pteridaceae	<i>Pteridium aquilinum</i>	Bracken fern
	Pteridaceae	<i>Pteris etata</i> <sup>E</sup>	Cliff brake
	Thelypteridaceae	<i>Thelypteris dentata</i>	Woodfern

Gymnosperms	Cupressaceae	<i>Juniperus virginiana</i> var. <i>silicicola</i>	Red cedar
	Pinaceae	<i>Pinus taeda</i>	Loblolly pine
Monocots	Agavaceae	<i>Yucca aloifolia</i>	Aloe yucca
	Amaryllidaceae	<i>Narcissus X medioluteus</i> <sup>C</sup>	Daffodil
	Amaryllidaceae	<i>Leucojum aestivum</i> <sup>C</sup>	Snowdrops
	Araceae	<i>Arisaema dracontium</i>	Green dragon
	Arecaceae	<i>Sabal palmetto</i>	Palmetto
	Arecaceae	<i>Serenoa repens</i>	Saw palmetto
	Bromeliaceae	<i>Tillandsia usneoides</i>	Spanish moss
	Cyperaceae	<i>Cyperus pseudovegetus</i>	Marsh flatsedge
	Cyperaceae	<i>Cyperus retrorsus</i>	Pine barren flatsedge
	Cyperaceae	<i>Cyperus strigosus</i>	Stawcolored flatsedge
	Cyperaceae	<i>Eleocharis vivipara</i>	Viviparous spikerush
	Cyperaceae	<i>Scleria triglomerata</i>	Whip nutrush
	Cyperaceae	<i>Rhynchospora colorata</i>	White-tipped sedge
	Iridaceae	<i>Iris hexagona</i>	Iris
	Iridaceae	<i>Sisyrinchium rosulatum</i>	Annual blue-eyed grass
	Juncaceae	<i>Juncus roemerianus</i>	Black needle-rush
	Liliaceae	<i>Allium bivalve</i>	Field garlic
	Liliaceae	<i>Ambrosia artemisiifolia</i>	Annual ragweed
	Poaceae	<i>Arundinaria gigantea</i>	Giant cane
	Poaceae	<i>Chasmanthium laxum</i>	Slender woodoats
	Poaceae	<i>Chasmanthium nitidum</i>	Shiny woodoats
	Poaceae	<i>Chasmanthium sessiliflorum</i>	Longleaf woodoats
	Poaceae	<i>Dichanthelium strigosum</i>	Roughhair rosette grass
	Poaceae	<i>Distichlis spicata</i>	Salt grass
	Poaceae	<i>Glyceria striata</i>	Manna grass
	Poaceae	<i>Oplismenus hirtellus</i>	Basket grass
	Poaceae	<i>Paspalum laeve</i>	Field paspalum
	Poaceae	<i>Poa annua</i> <sup>E</sup>	Annual grass
	Poaceae	<i>Sorghum halepense</i> <sup>E</sup>	Johnson grass
	Poaceae	<i>Spartina alterniflora</i>	Saltmarsh cordgrass
	Poaceae	<i>Spartina bakeri</i>	Cordgrass

	Poaceae	<i>Spartina cynosuroides</i>	Cordgrass
	Poaceae	<i>Sphenopholis obtusata</i>	Prairie wedgegrass
	Poaceae	<i>Stenotaphrum secundatum</i> <sup>E</sup>	St. Augustine grass
	Poaceae	<i>Stipa avenacea</i>	Oatgrass
	Smilacaceae	<i>Smilax auriculata</i>	Earleaf greenbrier
	Smilacaceae	<i>Smilax smallii</i>	Lanceleaf greenbrier
Dicots	Acanthaceae	<i>Ruellia caroliniensis</i>	Carolina wild petunia
	Aceraceae	<i>Acer rubrum</i>	Red maple
	Anacardiaceae	<i>Rhus copallina</i>	Winged sumac
	Anacardiaceae	<i>Toxicodendron radicans</i>	Poison ivy
	Annonaceae	<i>Asimina parviflora</i>	Dwarf pawpaw
	Apiaceae	<i>Chaerophyllum tainturieri</i>	Wild chervil
	Apiaceae	<i>Hydrocotyle bonariensis</i>	Beach pennywort
	Apiaceae	<i>Hydrocotyle umbellata</i>	Marsh pennywort
	Apiaceae	<i>Ptilimnium capillaceum</i>	Herbwilliam
	Apiaceae	<i>Sanicula canadensis</i>	Canadian blacksnakeroot
	Aquifoliaceae	<i>Ilex glabra</i>	Inkberry
	Aquifoliaceae	<i>Ilex myrtifolia</i>	Myrtle dahoon
	Aquifoliaceae	<i>Ilex vomitoria</i>	Inkberry
	Araliaceae	<i>Aralia spinosa</i>	Devil's walking stick
	Asteraceae	<i>Baccharis angustifolia</i>	Saltwater false willow
	Asteraceae	<i>Baccharis halimifolia</i>	Groundsel
	Asteraceae	<i>Borrichia frutescens</i>	Bushy sea ox-eye
	Asteraceae	<i>Carphephorus odoratissima</i>	Vannilla plant, deer-tongue
	Asteraceae	<i>Cirsium horridulum</i>	Yellow thistle
	Asteraceae	<i>Cirsium nuttallii</i>	Nuttall's thistle
	Asteraceae	<i>Conyza bonariensis</i>	Asthmaweed
	Asteraceae	<i>Conyza canadensis</i>	Horseweed
	Asteraceae	<i>Elephantopus elatus</i>	Elephant's foot
	Asteraceae	<i>Elephantopus nudatus</i>	Elephant's foot
	Asteraceae	<i>Erigeron quercifolius</i>	Daisy fleabane
	Asteraceae	<i>Eupatorium capillifolium</i>	Dogfennel
	Asteraceae	<i>Facelis retusa</i> <sup>E</sup>	Annual trampweed
	Asteraceae	<i>Gamochaeta pensylvanica</i>	Cudweed
	Asteraceae	<i>Iva frutescens</i>	Marsh elder

Asteraceae	<i>Krigia virginica</i>	Dwarf dandelion
Asteraceae	<i>Melanthera nivea</i>	Snow squarestem
Asteraceae	<i>Mikania scandens</i>	Climbing hempweed
Asteraceae	<i>Pluchea rosea</i>	Rosy marsh fleabane
Asteraceae	<i>Psuedognaphalium obtusifolium</i>	Rabbit tobacco
Asteraceae	<i>Pyrrhopappus carolinianus</i>	Carolina false dandelion
Asteraceae	<i>Solidago odora</i>	Fragrant goldenrod
Asteraceae	<i>Sonchus asper</i>	Prickly sowthistle
Asteraceae	<i>Symphytum tenuifolium</i>	Marsh aster
Asteraceae	<i>Taraxacum officinale</i> <sup>E</sup>	Dandelion
Asteraceae	<i>Verbesina occidentalis</i>	Yellow crownbeard
Asteraceae	<i>Verbesina virginica</i>	White verbesina
Asteraceae	<i>Youngia japonica</i> <sup>E</sup>	Asiatic false hawksbeard
Bataceae	<i>Batis maritima</i>	Saltwort, Turtleweed
Bignoniaceae	<i>Anisostichus capreolata</i>	Cross vine
Brassicaceae	<i>Lepidium virginicum</i>	Virginia peppergrass
Cactaceae	<i>Opuntia humifusa</i>	Prickly pear
Campanulaceae	<i>Specularia perfoliata</i> <sup>E</sup>	Venus looking-glass
Caprifoliaceae	<i>Lonicera japonica</i>	Japanese honeysuckle
Caprifoliaceae	<i>Lonicera sempervirens</i>	Trumpet honeysuckle
Caryophyllaceae	<i>Cerastium glomeratum</i> <sup>E</sup>	Mouse-ear chickweed
Caryophyllaceae	<i>Spergularia salina</i>	Salt sand spurrey
Caryophyllaceae	<i>Stellaria media</i> <sup>E</sup>	Common chickweed
Chenopodiaceae	<i>Salicornia virginica</i>	Virginia glasswort
Cistaceae	<i>Oldenlandia carolinianum</i>	Carolina rockrose
Cistaceae	<i>Oldenlandia corymbosum</i>	Pinebarren frostweed
Commelinaceae	<i>Tradescantia ohiensis</i>	Ohio spiderwort
Convolvulaceae	<i>Ipomoea cordatotriloba</i> var. <i>cordatotriloba</i>	Morning glory
Convolvulaceae	<i>Ipomoea sagittata</i>	Saltmarsh morning-glory
Ebenaceae	<i>Diospyros virginiana</i>	Persimmon
Ericaceae	<i>Rhododendron</i> ssp. <sup>C</sup>	Cultivated azalea hybrid
Ericaceae	<i>Vaccinium arboreum</i>	Sparkleberry
Ericaceae	<i>Vaccinium atrococcum</i>	Black highbush blueberry
Ericaceae	<i>Vaccinium corymbosum</i>	Highbush blueberry
Ericaceae	<i>Vaccinium ellottii</i>	Elliott's blueberry

Euphorbiaceae	<i>Cnidoscolus stimulosus</i>	Tread softly
Euphorbiaceae	<i>Cornus florida</i>	Flowering dogwood
Euphorbiaceae	<i>Croton willdenowii</i>	Croton
Euphorbiaceae	<i>Sapium sebiforum</i> <sup>E</sup>	Chinese tallow
Fabaceae	<i>Albizia julibrissin</i>	Silktree, mimosa
Fabaceae	<i>Amorpha herbacea</i>	Clusterspike false indigo
Fabaceae	<i>Cassia aspera</i>	Sensitive plant
Fabaceae	<i>Centrosema virginianum</i>	Butterfly pea
Fabaceae	<i>Cercis canadensis</i>	Eastern redbud
Fabaceae	<i>Chamaecrista fasciculata</i> <i>var. fasciculata</i>	Partridge pea
Fabaceae	<i>Clitoria mariana</i>	Butterfly pea
Fabaceae	<i>Daubentonia punicea</i> <sup>E</sup>	Daubentonia
Fabaceae	<i>Desmodium incanum</i>	Beggar ticks
Fabaceae	<i>Desmodium nuttallii</i>	Beggar ticks
Fabaceae	<i>Desmodium paniculatum</i>	Beggar ticks
Fabaceae	<i>Desmodium tenuifolium</i>	Beggar ticks
Fabaceae	<i>Erythrina herbacea</i>	Eastern coralbean
Fabaceae	<i>Lespedeza nuttallii</i>	Lespedeza
Fabaceae	<i>Medicago arabica</i> <sup>E</sup>	Spotted burclover, spotted medick
Fabaceae	<i>Medicago polymorpha</i>	Bur clover
Fabaceae	<i>Trifolium campestre</i>	Field clover
Fabaceae	<i>Trifolium repens</i>	White clover
Fabaceae	<i>Wisteria sinensis</i>	Chinese wisteria
Fagaceae	<i>Quercus austrina</i>	Bastard white oak
Fagaceae	<i>Quercus hemisphaerica</i>	Laurel oak
Fagaceae	<i>Quercus nigra</i>	Water oak
Fagaceae	<i>Quercus virginiana</i>	Live oak
Guttiferae	<i>Hypericum hypericoides</i>	St. Andrew's cross
Hamamelidaceae	<i>Liquidambar styraciflua</i>	Sweetgum
Juglandaceae	<i>Carya glabra</i>	Pignut hickory
Juglandaceae	<i>Carya illinoensis</i>	Pecan
Lamiaceae	<i>Salvia lyrata</i>	Lyreleaf sage
Lamiaceae	<i>Stachys floridana</i>	Florida hedgenettle
Lamiaceae	<i>Teucrium canadense</i>	Canada germander
Lauraceae	<i>Cinnamomum camphora</i> <sup>C</sup>	Camphor tree

Lauraceae	<i>Persea borbonia</i>	Red bay
Lauraceae	<i>Sassafras albidum</i>	Sassafras
Linaceae	<i>Linaria canadensis</i>	Canada toadflax
Logoniaceae	<i>Polypremum procumbens</i>	Juniper leaf
Lythraceae	<i>Lagerstroemia indica</i> <sup>C</sup>	Crepe myrtle
Magnoliaceae	<i>Magnolia grandiflora</i>	Bullbay
Magnoliaceae	<i>Magnolia virginiana</i>	Sweetbay
Menispermaceae	<i>Cocculus carolinus</i>	Carolina coralberry
Moraceae	<i>Maclura pomifera</i> <sup>C</sup>	Osage orange
Moraceae	<i>Morus rubra</i>	Red mulberry
Myricaceae	<i>Myrica cerifera</i>	Wax myrtle
Nyssaceae	<i>Nyssa sylvatica</i>	Black gum
Oleaceae	<i>Ligustrum japonicum</i> <sup>E</sup>	Japanese privet
Oleaceae	<i>Ligustrum sinense</i> <sup>E</sup>	Chinese privet
Oleaceae	<i>Nerium oleander</i>	Oleander
Oxalidaceae	<i>Oxalis dillenii</i>	Dillen's oxalis
Oxalidaceae	<i>Oxalis violacea</i>	Violet wood sorrel
Plantaginaceae	<i>Plantago major</i>	Broadleaf plantain
Plantaginaceae	<i>Plantago virginica</i>	Plantain
Platanaceae	<i>Platanus occidentalis</i>	American sycamore
Polygonaceae	<i>Rumex acetosella</i> <sup>E</sup>	Common sheep sorrel
Primulaceae	<i>Samolus valerandi</i> ssp. <i>parviflorus</i>	Water pimpernel
Rosaceae	<i>Prunus angustifolia</i>	Chickasaw plum
Rosaceae	<i>Prunus caroliniana</i>	Carolina laurel cherry
Rosaceae	<i>Prunus serotina</i>	Black cherry
Rosaceae	<i>Prunus umbellata</i>	Hog plum
Rosaceae	<i>Rubus trivialis</i>	Southern dewberry
Rubiaceae	<i>Cephalanthus occidentalis</i>	Button bush
Rubiaceae	<i>Diodia virginiana</i>	Poor joe
Rubiaceae	<i>Galium hispidulum</i>	Coastal bedstraw
Rubiaceae	<i>Galium lanceolatum</i>	Lanceleaf wild licorice
Rubiaceae	<i>Houstonia procumbens</i>	Roundleaf bluet
Rutaceae	<i>Citrus</i> ssp <sup>C</sup>	Citrus
Sapotaceae	<i>Sideroxylon tenax</i> <sup>C</sup>	Bumelia
Solanaceae	<i>Solanum carolinense</i>	Carolina horsenettle

Symplocaceae	<i>Symplocos tinctoria</i>	Horse sugar
Ulmaceae	<i>Celtis laevigata</i>	Hackberry
Urticaceae	<i>Boehmeria cylindrica</i>	False nettle
Verbenaceae	<i>Callicarpa americana</i>	Beautyberry
Verbenaceae	<i>Lantana camara<sup>E</sup></i>	Largeleaf lantana
Verbenaceae	<i>Lippia nodiflora</i>	Frog fruit
Violaceae	<i>Viola affinis</i>	Sand violet
Vitaceae	<i>Parthenocissus quinquefolia</i>	Virginia creeper
Vitaceae	<i>Vitis aestivalis</i>	Summer grape
Vitaceae	<i>Vitis rotundifolia</i>	Muscadine

Appendix A.2: Potential species not found in 2003 survey.

	Family	Species	Common name
Monocots	Cycadaceae	<i>Cycas revoluta</i>	sago palm
	Cyperaceae	<i>Cenchrus longispinus</i>	Long-spined sandspur
	Cyperaceae	<i>Eleocharis</i>	Spikerush, Spikesedge
	Cyperaceae	<i>Fimbristylis spadicea</i>	
	Orchidaceae	<i>Listera australis</i>	southern twayblade
	Poaceae	<i>Dichanthelium commutatum</i>	
	Poaceae	<i>Paspalum notatum</i>	
	Poaceae	<i>Penisetum glaucum</i>	
	Poaceae	<i>Setaria corrugata</i>	
	Poaceae	<i>Setaria geniculata</i>	
	Poaceae	<i>Spartina patens</i>	
	Poaceae	<i>Uniola sessiliflora</i>	
	Smilacaceae	<i>Smilax bona-nox</i>	saw greenbrier
	Smilacaceae	<i>Smilax glauca</i>	Cat greenbrier
	Smilacaceae	<i>Smilax pumila</i>	sarsparilla vine
	Smilacaceae	<i>Sonchus oleraceus</i>	Common sow-thistle
Dicots	Asclepidaceae	<i>Cynanchum palustre</i>	
	Asteraceae	<i>Bidens bipinnata</i>	Beggar ticks
	Asteraceae	<i>Carduus smallii</i>	
	Asteraceae	<i>Conoclinium coelestinum</i>	
	Asteraceae	<i>Erigeron canadensis var. pusillus</i>	
	Asteraceae	<i>Erigeron strigosus</i>	Daisy fleabane
	Asteraceae	<i>Gamochaeta americana</i>	
	Asteraceae	<i>Gamochaeta falcata</i>	

Asteraceae	<i>Gamochaeta purpureum</i>	rabbit tobacco
Asteraceae	<i>Gamochaeta spathulatum</i>	
Asteraceae	<i>Pyrrhopappus carolinianus</i>	Carolina false dandelion
Asteraceae	<i>Symphyotrichum dumosum</i>	
Brassicaceae	<i>Cardamine hirsuta</i>	hairy bittercress
Cactaceae	<i>Opuntia compressa</i>	
Caryophyllaceae	<i>Cerastium holosteoides var. vulgare</i>	
Caryophyllaceae	<i>Mollugo verticillata</i>	carpetweed
Convolvulaceae	<i>Dichondra carolinensis</i>	Carolina ponysfoot
Euphorbiaceae	<i>Croton capitatus</i>	
Euphorbiaceae	<i>Croton punctatus</i>	Beach croton
Euphorbiaceae	<i>Phyllanthus caroliniensis</i>	
Fabaceae	<i>Galactia volubilis</i>	downy milkpea
Fabaceae	<i>Strophostyles helvula</i>	
Fabaceae	<i>Trifolium carolinianum</i>	Carolina clover
Fabaceae	<i>Vicia angustifolia</i>	garden vetch
Fabaceae	<i>Vicia caroliniana</i>	Carolina vetch
Fagaceae	<i>Quercus hemisphaerica</i>	Darlington oak
Geraniaceae	<i>Geranium carolinianum</i>	
Guttiferae	<i>Hypericum cistifolium</i>	roundpod St. Johnswort
Guttiferae	<i>Hypericum mutilum</i>	dwarf St. Johnswort
Guttiferae	<i>Hypericum stans</i>	
Lamiaceae	<i>Monarda clinopodia</i>	white bergamot
Lamiaceae	<i>Salvia azurea</i>	azure blue sage, blue sage
Lamiaceae	<i>Salvia coccinea</i>	blood sage
Lamiaceae	<i>Scutellaria elliptica</i>	Hairy skullcap
Lamiaceae	<i>Scutellaria incana</i>	Hoary skullcap
Liliaceae	<i>Zephyranthes atamasca</i>	Atamasco lily
Lythraceae	<i>Cuphea carthagrenensis</i>	Colombian waxweed
Malvaceae	<i>Modiola caroliniana</i>	
Malvaceae	<i>Sida rhombifolia</i>	Arrowleaf sida
Melastomataceae	<i>Rhexia alifanus</i>	savannah meadowbeauty
Moraceae	<i>Ficus carica</i>	common fig
Onagraceae	<i>Gaura angustifolia</i>	southern beebllossom
Onagraceae	<i>Oenothera humifusa</i>	
Oxalidaceae	<i>Oxalis rubra</i>	Windowbox wood sorrel
Passifloraceae	<i>Passiflora incarnata</i>	purple passionflower
Platanginaceae	<i>Plantago lanceolata</i>	
Platanginaceae	<i>Plantago sparsiflora</i>	pineland plantain
Polemiaceae	<i>Phlox carolina</i>	thickleaf phlox
Polygonaceae	<i>Polygonum hydropiperoides</i>	swamp smartweed
Polygonaceae	<i>Polygonum persicaria</i>	smartweed

Pontederiaceae	<i>Pontederia cordata</i>	pickerelweed
Rosaceae	<i>Crataegus crus-galli</i>	
Rosaceae	<i>Geum canadense</i>	white avens
Rosaceae	<i>Potentilla simplex</i>	common cinquefoil
Rosaceae	<i>Pyrus communis</i>	common pear, pear
Rubiaceae	<i>Galium obtusum</i>	Blunt-leaf bedstraw
Rubiaceae	<i>Galium pilosum</i>	hairy bedstraw
Rubiaceae	<i>Galium tinctorium</i>	dye bedstraw
Rubiaceae	<i>Galium tinctorium</i>	
Scrophulariaceae	<i>Gratiola virginiana</i>	Virginia hedge hyssop
Scrophulariaceae	<i>Paulownia tomentosa</i>	princess tree
Scrophulariaceae	<i>Verbascum thapsus</i>	common mullein
Scrophulariaceae	<i>Veronica arvensis</i>	common speedwell
Solanaceae	<i>Physalis angulata</i>	
Solanaceae	<i>Physalis virginiana</i>	
Verbenaceae	<i>Verbena bonariensis</i>	
Violaceae	<i>Viola lanceolata</i>	Lanceleaf violet
Violaceae	<i>Viola palmata</i>	early blue violet

## Appendix B: Vascular Plants of Fort Sumter/Fort Moutrie National Monument

Division	Family	Scientific Name	Common Name
Fern	Polypodiaceae	<i>Polypodium polypodioides</i>	Resurrection fern
	Pteridaceae	<i>Pteris vittata</i> <sup>E</sup>	Ladder brake
Gymnosperm	Cupressaceae	<i>Juniperus virginiana</i> var. <i>silicicola</i>	Red cedar
Monocot	Agavaceae	<i>Yucca filamentosa</i>	Beargrass
	Bromeliaceae	<i>Tillandsia usneoides</i>	Spanish moss
	Cyperaceae	<i>Cyperus pseudovegetus</i>	Marsh flatsedge
	Cyperaceae	<i>Cyperus retrorsus</i>	Pine barren flatsedge
	Cyperaceae	<i>Cyperus strigosus</i>	Stawcolored flatsedge
	Poaceae	<i>Andropogon ternarius</i>	Splitbeard bluestem
	Poaceae	<i>Cenchrus longispinus</i>	Long-spined sandspur
	Poaceae	<i>Chasmanthium laxum</i>	Slender woodoats
	Poaceae	<i>Cynodon dactylon</i> <sup>E</sup>	Bermuda grass
	Poaceae	<i>Dichanthelium commutatum</i>	Variable panic grass

	Poaceae	<i>Muhlenbergia capillaris</i> var. <i>trichopodes</i>	Sweetgrass
	Poaceae	<i>Paspalum notatum</i> <sup>E</sup>	Bahia grass
	Poaceae	<i>Setaria corrugata</i>	Foxtail grass
	Poaceae	<i>Sorghum halepense</i> <sup>E</sup>	Johnson grass
	Poaceae	<i>Spartina alterniflora</i>	Saltmarsh cordgrass
	Poaceae	<i>Sphenopholis obtusata</i>	Wedge grass
	Poaceae	<i>Stenotaphrum secundatum</i> <sup>E</sup>	St. Augustine
	Poaceae	<i>Uniola paniculata</i>	Sea oats
	Smilacaceae	<i>Smilax bona-nox</i>	Greenbriar
	Smilacaceae	<i>Smilax laurifolia</i>	Laurel-leaved greenbriar
Dicot	Apiaceae	<i>Hydrocotyle bonariensis</i>	Largeleaf pennywort
	Apiaceae	<i>Hydrocotyle verticillata</i>	Pennywort
	Apiaceae	<i>Sanicula canadensis</i>	Canada black snakeroot
	Apocynaceae	<i>Nerium oleander</i>	Oleander
	Aquifoliaceae	<i>Ilex vomitoria</i>	Yaupon
	Asteraceae	<i>Ambrosia artemisiifolia</i>	Ragweed
	Asteraceae	<i>Baccharis halimifolia</i>	Eastern baccharis
	Asteraceae	<i>Bidens bipinnata</i>	Beggar ticks
	Asteraceae	<i>Borrichia frutescens</i>	Bushy sea ox-eye
	Asteraceae	<i>Carphephorus odoratissimus</i>	Vanilla plant, Deer's tongue
	Asteraceae	<i>Cirsium nuttallii</i>	Nuttall's thistle
	Asteraceae	<i>Conoclinium coelestinum</i>	Ageratum
	Asteraceae	<i>Conyzza bonariensis</i> <sup>E</sup>	Asthmaweed
	Asteraceae	<i>Conyzza canadensis</i>	Horseweed
	Asteraceae	<i>Coreopsis basalis</i>	Coreopsis
	Asteraceae	<i>Elephantopus carolinianus</i>	Elephant's foot
	Asteraceae	<i>Elephantopus nudatus</i>	Elephant's foot
	Asteraceae	<i>Erigeron philadelphicus</i>	Daisy fleabane
	Asteraceae	<i>Erigeron quercifolius</i>	Daisy fleabane
	Asteraceae	<i>Eupatorium capillifolium</i>	Dog fennel
	Asteraceae	<i>Gaillardia pulchella</i>	Indian blanket
	Asteraceae	<i>Gamochaeta purpurea</i>	Cudweed
	Asteraceae	<i>Iva frutescens</i>	Marsh elder
	Asteraceae	<i>Oldenlandia corymbosa</i>	Flat-topped mille graines
	Asteraceae	<i>Pseudognaphalium obtusifolium</i> ssp. <i>obtusifolium</i>	Rabbit tobacco
	Asteraceae	<i>Pyrrhopappus carolinianus</i>	Carolina false dandelion
	Asteraceae	<i>Solidago odora</i>	Fragrant goldenrod

	Asteraceae	<i>Sonchus asper</i> <sup>E</sup>	Prickly sowthistle
	Asteraceae	<i>Symphyotrichum dumosum</i>	Frost aster
	Bignoniaceae	<i>Anisostichus capreolata</i>	Cross vine
	Bignoniaceae	<i>Campsis radicans</i>	Trumpet vine
	Brassicaceae	<i>Lepidium virginicum</i>	Pepper grass
	Chenopodiaceae	<i>Chenopodium ambrosioides</i> <sup>E</sup>	Mexican tea
	Cistaceae	<i>Lechea mucronata</i>	Pinweed
	Convolvulaceae	<i>Ipomoea carnea</i> ssp. <i>fistulosa</i>	Morning glory
	Convolvulaceae	<i>Ipomoea imperati</i>	Railroad vine
	Convolvulaceae	<i>Ipomoea sagittata</i>	Morning glory
	Ericaceae	<i>Rhododendron</i> <sup>C</sup>	Cultivated azalea hybrid
	Euphorbiaceae	<i>Acalypha gracilens</i>	Three-seeded mercury
	Euphorbiaceae	<i>Croton punctatus</i>	Beach croton
	Euphorbiaceae	<i>Croton willdenowii</i>	Croton
	Fabaceae	<i>Centrosema virginianum</i>	Butterfly pea
	Fabaceae	<i>Clitoria mariana</i>	Butterfly pea
	Fabaceae	<i>Daubentonias punicea</i> <sup>E</sup>	Flame tree
	Fabaceae	<i>Desmodium incanum</i>	Beggar ticks
	Fabaceae	<i>Senna obtusifolia</i>	Sicklepod
	Fabaceae	<i>Strophostyles helvula</i>	Wild Bean
	Fabaceae	<i>Trifolium repens</i> <sup>E</sup>	White clover
	Fagaceae	<i>Quercus chapmanii</i>	Chapman's oak
	Fagaceae	<i>Quercus nigra</i>	Water oak
	Gentianaceae	<i>Sabatia stellaris</i>	Sabatia
	Guttiferae	<i>Hypericum hypericoides</i>	St. Andrew's cross
	Juglandaceae	<i>Carya illinoinensis</i> <sup>C</sup>	Pecan
	Lamiaceae	<i>Salvia lyrata</i>	Lyre-leaved sage
	Lamiaceae	<i>Stachys floridana</i>	Florida hedge-nettle
	Lamiaceae	<i>Teucrium canadense</i>	Woodsage
	Myricaceae	<i>Myrica cerifera</i>	Wax myrtle
	Onagraceae	<i>Oenothera drummondii</i>	Yellow evening primrose
	Onagraceae	<i>Oenothera fruticosa</i>	Evening primrose
	Onagraceae	<i>Oenothera humifusa</i>	Yellow evening primrose
	Oxalidaceae	<i>Oxalis rubra</i> <sup>E</sup>	Windowbox wood sorrel
	Phytolaccaceae	<i>Phytolacca americana</i>	Pokeweed
	Pittosporaceae	<i>Pittosporum tobira</i> <sup>C</sup>	Pittosporum
	Plantaginaceae	<i>Plantago lanceolata</i> <sup>E</sup>	English plantain
	Plantaginaceae	<i>Plantago virginica</i>	Plantain
	Polygonaceae	<i>Polygonum punctatum</i>	Knotweed
	Polygonaceae	<i>Polygonum virginianum</i>	Knotweed

Polygonaceae	<i>Rumex hastatulus</i>	Dock
Rosaceae	<i>Prunus angustifolia</i>	Chickasaw plum
Rubiaceae	<i>Diodia teres</i>	Poor joe
Rutaceae	<i>Zanthoxylum clava-herculis</i>	Prickly ash
Sapotaceae	<i>Sideroxylon tenax</i>	Bumelia
Solanaceae	<i>Solanum carolinense</i>	Carolina horsenettle
Solanaceae	<i>Solanum pseudogracile</i>	Nightshade
Tamaricaceae	<i>Tamarix gallica<sup>E</sup></i>	Tamarisk
Theaceae	<i>Camellia japonica<sup>C</sup></i>	Camellia
Theaceae	<i>Camellia sasanqua<sup>C</sup></i>	Camellia
Ulmaceae	<i>Celtis laevigata</i>	Hackberry, Sugarberry
Verbenaceae	<i>Lippia nodiflora</i>	Frog fruit
Verbenaceae	<i>Verbena bonariensis<sup>E</sup></i>	Tall verbena
Vitaceae	<i>Ampelopsis arborea</i>	Peppervine
Vitaceae	<i>Parthenocissus quinquefolia</i>	Virginia creeper

#### Appendix C: Vascular Plants of Charles Pinckney Historic Site.

Division	Family	Scientific Name	Common Name
Ferns	Blechnaceae	<i>Woodwardia areolata</i>	Netted chain fern
Gymnosperm	Pinaceae	<i>Pinus taeda</i>	Loblolly pine
	Cupressaceae	<i>Juniperus</i>	Red Cedar
Monocots	Arecaceae	<i>Sabal palmetto</i>	Cabbage palmetto
	Bromeliaceae	<i>Tillandsia usneoides</i>	Spanish moss
	Iridaceae	<i>Sisyrinchium rosulatum</i>	Annual blue-eyed grass
	Juncaceae	<i>Juncus roemerianus</i>	Black needle-rush
	Poaceae	<i>Penisetum glaucum<sup>E</sup></i>	Millet
	Poaceae	<i>Setaria corrugata</i>	Foxtail grass
	Poaceae	<i>Setaria parviflora</i>	Foxtail grass
	Saururaceae	<i>Saururus cernuus</i>	Lizard's tail
	Solanaceae	<i>Physalis walteri</i>	Beach ground cherry
Dicots	Aceraceae	<i>Acer rubrum</i>	Red maple

Annonaceae	<i>Asimina parviflora</i>	Dwarf pawpaw
Apiaceae	<i>Sanicula canadensis</i>	Canadian blacksnakeroot
Asteraceae	<i>Baccharis halimifolia</i>	Eastern baccharis
Asteraceae	<i>Bidens bipinnata</i>	Beggar ticks
Asteraceae	<i>Conoclinium coelestinum</i>	Ageratum
Asteraceae	<i>Conyza canadensis</i>	Horseweed
Asteraceae	<i>Elephantopus carolinianus</i>	Carolina elephant's foot
Asteraceae	<i>Erigeron quercifolius</i>	Daisy fleabane
Asteraceae	<i>Eupatorium capillifolium</i>	Dogfennel
Asteraceae	<i>Melanthera nivea</i>	Snow squarestem
Asteraceae	<i>Pseudognaphalium obtusifolium</i>	Rabbit tobacco
Asteraceae	<i>Pyrrhopappus carolinianus</i>	Carolina false dandelion
Asteraceae	<i>Solidago odora</i>	Fragrant goldenrod
Asteraceae	<i>Symphyotrichum dumosum</i>	Frost aster
Asteraceae	<i>Verbesina occidentalis</i>	Yellow crownbeard
Bignoniaceae	<i>Catalpa speciosa<sup>E</sup></i>	Northern catalpa
Brassicaceae	<i>Lepidium virginicum</i>	Virginia peppergrass
Chenopodiaceae	<i>Chenopodium ambrosioides<sup>E</sup></i>	Mexican tea
Convolvulaceae	<i>Ipomoea carnea ssp. <i>fistulosa</i></i>	Morning glory
Cornaceae	<i>Cornus florida</i>	Flowering dogwood
Euphorbiaceae	<i>Acalypha gracilens</i>	Three-seeded mercury
Euphorbiaceae	<i>Cnidoscolus stimulosus</i>	Tread softly
Euphorbiaceae	<i>Sapium sebiforum<sup>E</sup></i>	Chinese tallow
Fabaceae	<i>Albizia julibrissin<sup>E</sup></i>	Mimosa
Fabaceae	<i>Crotalaria lanceolata<sup>E</sup></i>	Lanceleaf rattlebox
Fabaceae	<i>Daubentonia punicea<sup>E</sup></i>	Daubentonia
Fabaceae	<i>Medicago lupulina<sup>E</sup></i>	Black medic
Fabaceae	<i>Senna obtusifolia</i>	Sicklepod
Fabaceae	<i>Strophostyles helvula</i>	Wild bean
Fagaceae	<i>Fagus grandifolia</i>	American beech
Fagaceae	<i>Quercus nigra</i>	Water oak
Fagaceae	<i>Quercus virginiana</i>	Live oak
Gentianaceae	<i>Sabatia stellaris</i>	Sabatia
Hamamelidaceae	<i>Liquidambar styraciflua</i>	Sweetgum
Juglandaceae	<i>Carya illinoiensis<sup>C</sup></i>	Pecan
Juglandaceae	<i>Juglans regia<sup>C</sup></i>	English walnut
Magnoliaceae	<i>Magnolia grandiflora<sup>C</sup></i>	Bull bay
Malvaceae	<i>Modiola caroliniana</i>	Carolina bristlemallow
Malvaceae	<i>Sida rhombifolia</i>	Arrow-leaved sida
Myricaceae	<i>Myrica cerifera</i>	Wax myrtle
Oleaceae	<i>Ligustrum japonicum<sup>E</sup></i>	Japanese privet
Oleaceae	<i>Ligustrum sinense<sup>E</sup></i>	Chinese privet
Onagraceae	<i>Oenothera drummondii</i>	Yellow evening primrose
Oxalidaceae	<i>Oxalis rubra<sup>E</sup></i>	Windowbox woodsorrel
Passifloraceae	<i>Passiflora lutea</i>	Yellow passionflower

Platanaceae	<i>Platanus occidentalis</i>	American sycamore, Sycamore
Polygonaceae	<i>Polygonum punctatum</i>	Knotweed
Polygonaceae	<i>Polygonum virginianum</i>	Knotweed
Rosaceae	<i>Duchesnea indica</i> <sup>E</sup>	False wild strawberry
Rosaceae	<i>Prunus caroliniana</i>	Carolina laurel cherry
Rosaceae	<i>Prunus serotina</i>	Black cherry
Rosaceae	<i>Rubus</i> ssp	Blackberry
Rubiaceae	<i>Diodia teres</i>	Poor joe
Rubiaceae	<i>Diodia virginiana</i>	Virginia buttonweed
Solanaceae	<i>Solanum pseudogracile</i>	Nightshade
Theaceae	<i>Camellia japonica</i> C	Camellia
Theaceae	<i>Camellia sasanqua</i> C	Camellia
Verbenaceae	<i>Callicarpa americana</i>	American beautyberry
Verbenaceae	<i>Verbena bonariensis</i> <sup>E</sup>	Tall verbena
Vitaceae	<i>Vitis aestivalis</i>	Summer grape
Vitaceae	<i>Vitis rotundifolia</i>	Muscadine